Ultra-precision Professional Weather System
Model: WMR300 / WMR300A
USER MANUAL

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INTRODUCTION

Thank you for selecting the Oregon Scientific™ Ultra-precision Professional Weather System (WMR300 / WMR300A).

This system can provide you with weather information through several sensors with high level of accuracy. All sensors are cabled to a transmitter box which is battery and solar powered operated for wirelessly communicating and displaying the data on an indoor LCD main unit.

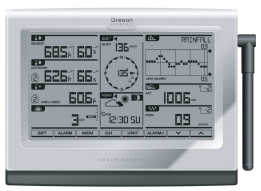
This system remembers the data for a time range for you to monitor and analyze the weather status. You can also export the data to PC by cable and manage and analyze the data systematically.

The system can expand up to 8 thermometer & humidity sensors and be compatible with other weather sensors. To purchase additional sensors, please contact your local retailer.

NOTE Please keep this manual handy as you use your new product. It contains practical step-by-step instructions, as well as technical specifications and warnings you should know about.

PACKAGING CONTENTS

DISPLAY UNIT



1 x Main unit

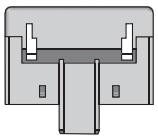
1 x USB cable

1 x Power adapter

3 x C 1.5V battery

SOLAR TRANSMITTER

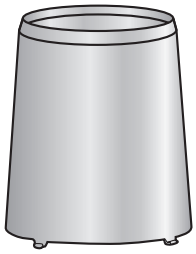
1 x Solar transmitter
(STC300/300A)



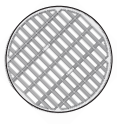
1 x Mounting insert

1 x AA 1.2V
rechargeable battery

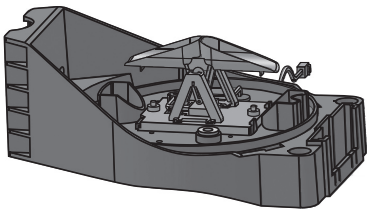
RAIN GAUGE



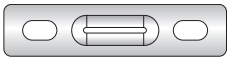
1 x Rain collector



1 x Plastic debris filter



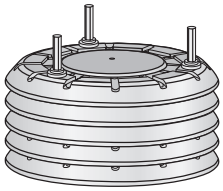
1 x Rain gauge
(PCR300)



1 x Backing metal plate

1 x U-bolt
(with 2 x lock washer
& 2 x flat washer & 2 x hex nut)

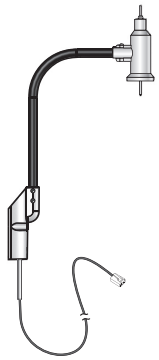
TEMPERATURE & HUMIDITY SENSOR



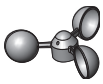
1 x Thermo/hygro casing with sensor installed (THGN300)

3 x Screws (Type B, with 3 x lock washer & 3 x flat washer)

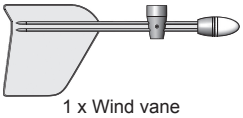
WIND SENSOR



1 x Wind sensor unit (WGR300)

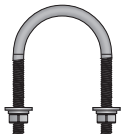


1 x Wind cups



1 x Wind vane

4 x Nylon cable tie



1 x U-bolt (with 2 x lock washer & 2 x flat washer & 2 x hex nut)

ASSEMBLY PARTS

2 x Screws (Type A, with 2 x lock washer & 2 x flat washer)

1 x Screw driver

ACCESSORIES - SENSORS

The system can expand up to 8 thermometer & humidity sensors and be compatible with other weather sensors. Optional wireless remote sensors (coming soon) such as those listed below can be purchased separately. For more information, please contact your local retailer.*

- Wireless repeater (Expand the transmission range)
- UV sensor (UV index & UV dose)
- Solar radiation sensor (Solar radiation, THSW & Evapotranspiration (ET))
- Aspirated fan (Increase accuracy of temp/humidity sensor)
- Soil/Leaf sensor (Soil moisture/temperature & Leaf wetness)

** Features and accessories will not be available in all countries.*

OVERVIEW

MAIN UNIT

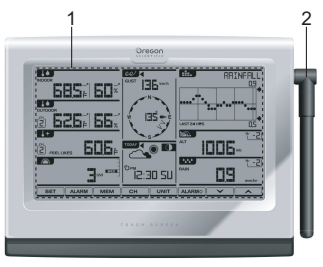


Figure 1 - Front View

1. LCD display
2. Antenna

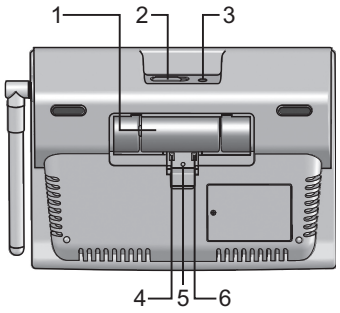


Figure 2 - Back View

1. Battery compartment
2. **USB** socket
3. Power adapter socket
4. Backlight (continuous) slide switch **ON/OFF**
5. **RESET**: Reset unit to default settings
6. **EU**/**UK** slide switch (WMR300 only)

TRANSMITTER BOX

Figure 3 - Front View

1. Solar panel
2. Antenna
3. Screw holes

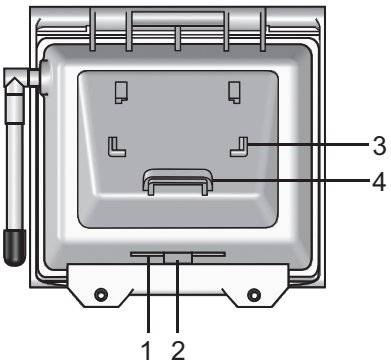


Figure 4 - Back View

1. Cable slot
2. Rubber stopper
3. Mounting bracket
4. Mounting ring

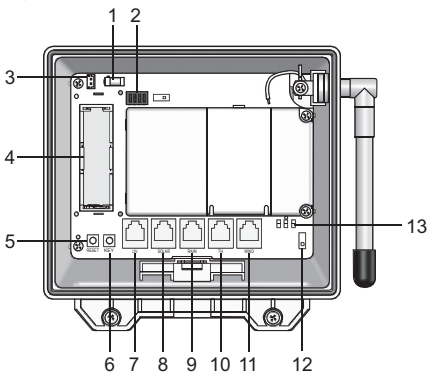


Figure 5 – Inside View

1. Power adapter socket (optional)
2. Channel setting slide switches (**SW1**)
3. Color-coded connector for connecting solar panel
4. Rechargeable battery compartment
5. **RESET** button
6. **KEY** button: for wind direction calibration
7. **UV** sensor socket (not available now)
8. **SOLAR** sensor socket (not available now)
9. **RAIN** sensor socket
10. **TH** (temperature & humidity sensor) socket
11. **WIND** sensor socket
12. Pairing slide switch (**SW4**)
13. LED lights (blue/green/red)

RAIN GAUGE

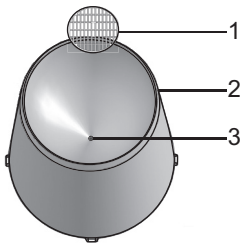


Figure 6 – Top View

1. Plastic debris filter
2. Rain collector
3. Collector hole

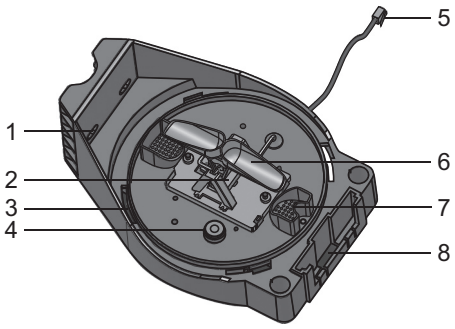


Figure 7 – Bottom View

1. Screw holes
2. Rain sensor
3. Rain collector installation hole
4. Balance indicator
5. Sensor cable
6. Tipping bucket
7. Drain holes
8. Hole for mounting insert

TEMPERATURE & HUMIDITY SENSOR

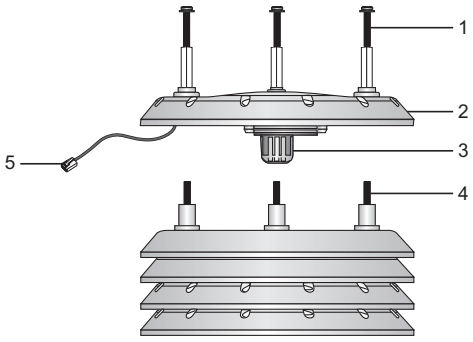


Figure 8

1. Screws (Type B)
2. Sensor casing
3. Temperature and humidity sensor
4. Screws (pre-installed)
5. Sensor cable

WIND SENSOR

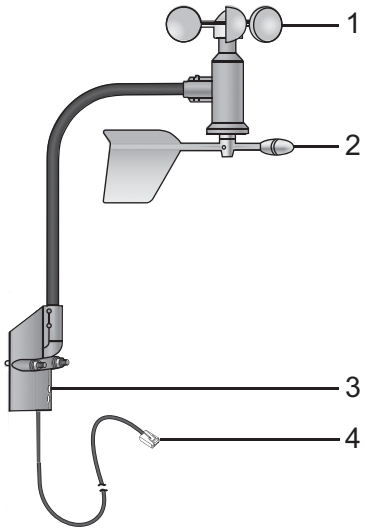
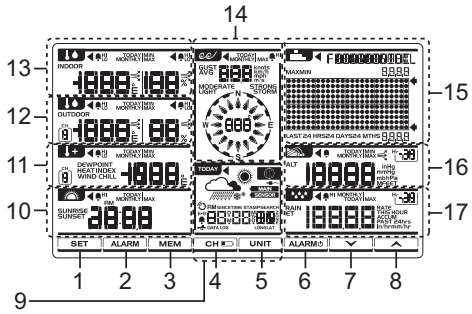


Figure 9

1. Wind cups (anemometer)
2. Wind vane
3. Wind sensor holder
4. Sensor cable

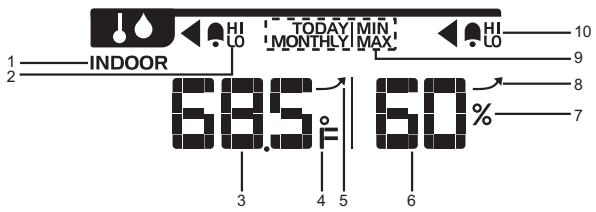
DETAILED LCD DISPLAY

LCD DISPLAY



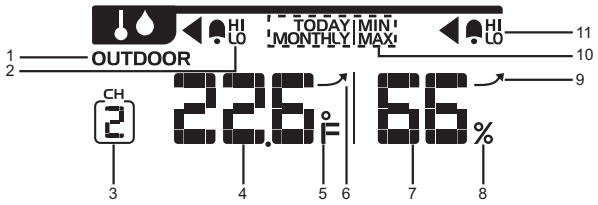
1. SET : Enter setting modes
2. ALARM : Set and view status of clock and **HI/LO** alarms
3. MEM : View current reading and memory.
4. CH / : Toggle between 8 different channels / low battery indicator
5. UNIT : Change display/measurement units
6. ALARM : Turn alarm on or off
7. : Press to decrease value
8. : Press to increase value
9. TODAY Clock / alarm / weather forecast / moon phase
10. Sunrise/sunset area
11. Dew point / heat index / wind chill area
12. Outdoor temperature and humidity area
13. Indoor temperature and humidity area
14. Wind speed / direction area
15. Bar chart area
16. Barometer area
17. Rainfall area

INDOOR TEMPERATURE & HUMIDITY



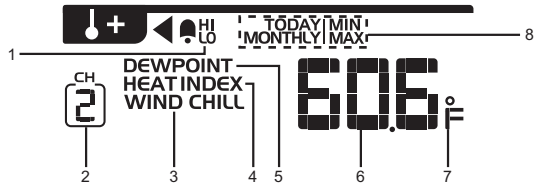
1. Indoor temperature/humidity indicator
2. **HI/LO** alarm: Alarms for high or low indoor temperature
3. Indoor temperature reading
4. **˚C** / **˚F**: Temperature unit
5. Indoor temperature trend
6. Indoor humidity reading
7. **%**:Humidity unit
8. Indoor humidity trend
9. **TODAY/MONTHLY/MIN/MAX**: Display the maximum/minimum of today's/ monthly indoor temperature / humidity reading
10. **HI/LO** alarm: Alarms for high or low indoor humidity

OUTDOOR TEMPERATURE & HUMIDITY



1. Outdoor temperature/humidity indicator
2. **HI/LO** alarm: Alarms for high or low outdoor temperature
3. Selected channel
4. Outdoor temperature reading
5. **˚C** / **˚F**: Temperature unit
6. Outdoor temperature trend
7. Outdoor humidity reading
8. **%**: Humidity unit
9. Outdoor humidity trend
10. **TODAY/MONTHLY/MIN/MAX**: Display the maximum/minimum of today's/ monthly outdoor temperature / humidity reading
11. **HI/LO** alarm: Alarms for high or low outdoor humidity

DEW POINT / HEAT INDEX / WIND CHILL

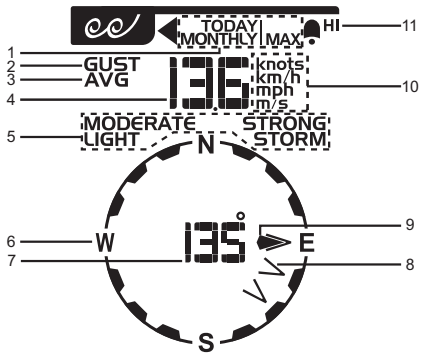


1. **HI/LO** alarm: Alarms for high or low temperature
2. Selected channel
3. Wind chill indicator (From CH1 reading only)
4. Heat index indicator
5. Dew point indicator
6. Dew point / heat index / wind chill temperature
7. **˚C** / **˚F**: temperature unit
8. **TODAY/MONTHLY/MIN/MAX**: Display the maximum/minimum of today's/ monthly dew point/heat index/wind chill reading

SUNRISE / SUNSET

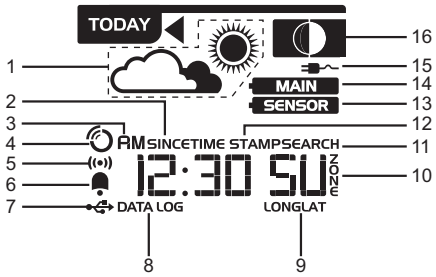
1. **AM/PM**
2. Sunrise indicator
3. Sunset indicator
4. Time display

WIND SPEED / WIND DIRECTION



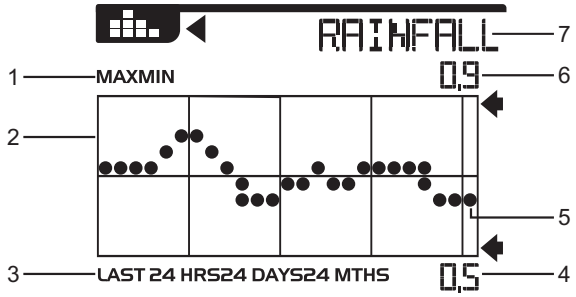
1. **TODAY/MONTHLY/MAX**: Display the maximum today's / monthly gust wind reading
2. Gust wind indicator
3. Average wind indicator
4. Wind speed reading
5. **MODERATE/LIGHT/STRONG/STORM:** Wind speed level indicators
6. **W**(West) / **S**(South) / **E**(East) / **N**(North)
7. Wind direction reading/calibrated angle reading
8. Wind direction indicator(s) during last 1 hour
9. Gust / average wind direction indicator
10. **Knots** / **km/h** / **mph** / **m/s**: Wind speed unit
11. **HI** alarm: Alarms for high wind speed

CLOCK / ALARM / WEATHER FORECAST/ MOON PHASE



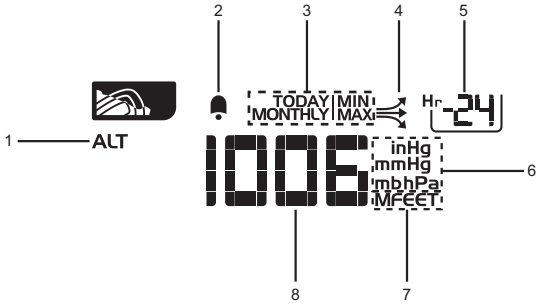
1. Weather forecast icon area
2. **SINCE**: Start date of the accumulated rainfall
3. **AM/PM**
4. RF clock signal reception indicator
5. Alarm display mode
6. Daily alarm indicator
7. USB port is successfully connected
8. **DATA LOG**: Data log information displays
9. **LONG/LAT**: Longitude/Latitude
10. Time zone offset
11. **SEARCH**: Searching for solar transmitter
12. **TIME STAMP**: Particular time of the selected memory
13. Solar transmitter is low battery
14. Main unit is low battery
15. Power adapter is connected
16. Moon phase area

BAR CHART



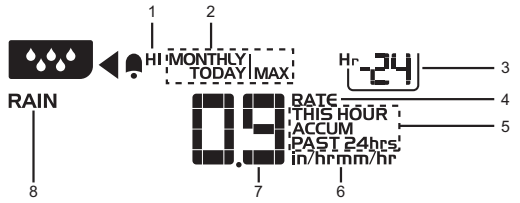
1. **MAX/MIN**: Maximum/minimum reading indicator of selected area
2. Bar chart area
3. **LAST 24HRS/24DAYS/24 MTHS**: Time range
4. Minimum reading for reference
5. Current graph reading of the corresponding area
6. Maximum reading for reference
7. **IN TEMP/IN HUM/OUT TEMP/OUT HUM/DEWPOINT/HEAT INDEX/ WIND CHILL/WIND/BARO/RAINFALL**: Chart mode indicators

BAROMETER



1. Altitude area indicator
2. : Alarm for changes of barometric pressure
3. **TODAY**/**MONTHLY**/**MIN**/**MAX**: Display the maximum/minimum of today's/ monthly barometric pressure reading
4. Barometer trend
5. Hourly records indicator (From **-24** to **0**)
6. **inHg / mmHg / mb / hPa**: Barometer unit
7. **M / FEET**: Altitude unit
8. Barometer reading

RAINFALL



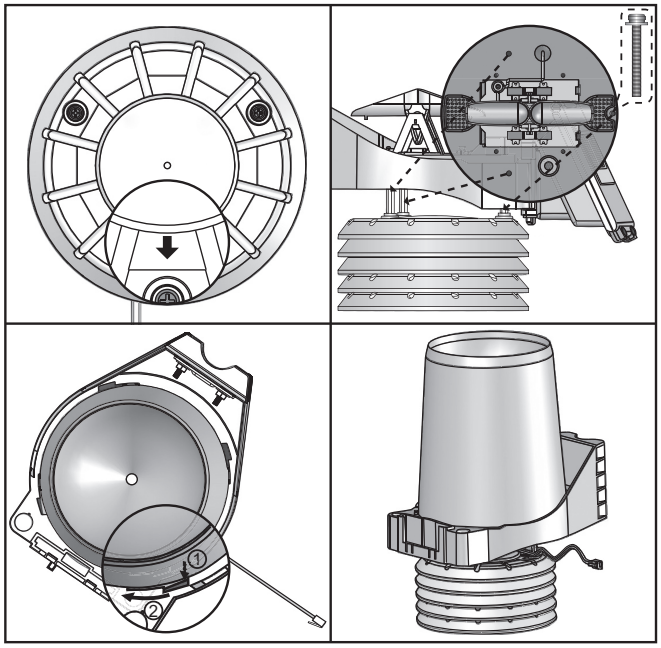
1. **HI** alarm: Alarms for high rain rate and past 24-hour rainfall.
2. **TODAY**/**MONTHLY**/**MAX**: Display the maximum of today's/monthly rainfall/rain rate reading
3. Hourly records indicator (From **-24** to **0**)
4. **RATE**: Rainfall rate
5. **THIS HOUR**/**ACCUM**/**PAST 24hrs**: Selected time range
6. **In**/**mm**: Rainfall unit; **In/hr** / **mm/hr**: Rain rate unit
7. Rain reading display
8. Rain area indicator

INSTALLATION

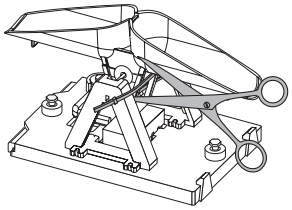
Please prepare some tools before starting your installation. You may need some types of screw drivers, wrenches or an electric drill.

SET UP RAIN SENSOR & THERMO / HYGRO SENSOR

The rain gauge collects rain and takes rainfall readings. The transmitter box can wirelessly transmit data to the main unit.



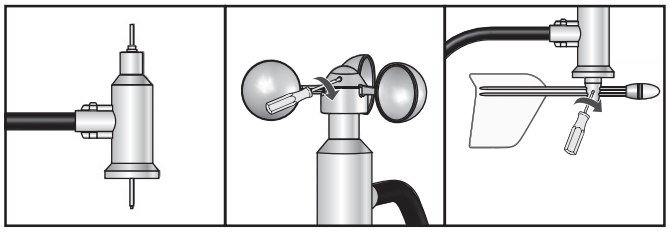
1. Make sure the engraved arrow on the thermo/hygro sensor casing towards the installation direction of the transmitter box.
2. Align three screw holes on the rain gauge with the three double end studs on the thermo/hygro sensor casing.
3. Tightly twist the type B screws into the double end studs to make sure the connection is firmly.
4. Put the rain collector on the rain gauge aligning the tipping with the holes, and then twist clockwise to secure it tightly.
5. Put the plastic debris filter in the rain collector.



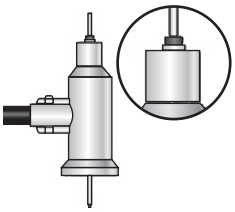
NOTE Cut away the cable tie on the tipping bucket before using.

SET UP WIND SENSOR

The wind sensor takes wind speed and direction readings.

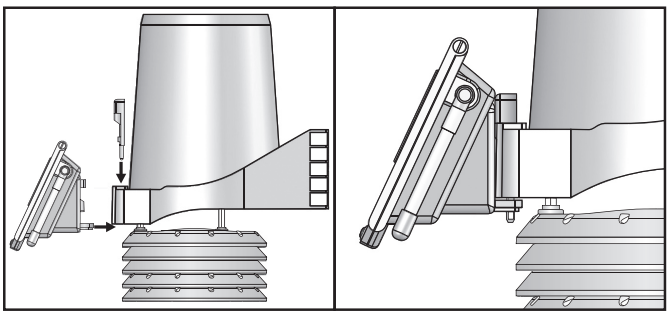


1. Loosen the screws in the wind cups and wind vane.
2. Insert the top of the wind sensor unit into the wind cups securely with some pressure and then twist the screw tightly.
3. Insert the bottom of the wind sensor unit into the wind vane securely with some pressure and then twist the screw tightly.



NOTE There is a rubber washer around the top of the wind sensor for preventing from hard touching during installation. You can move up the rubber washer a little bit before inserting the wind cup.

SET UP TRANSMITTER BOX

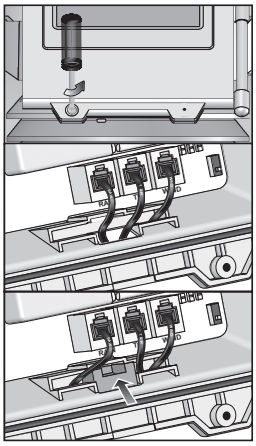


1. Approach the mounting ring of the transmitter box to the rain gauge, and align mounting ring with the bottom of the hole of the rain gauge.
2. Insert the mounting insert into the mounting ring of the transmitter box through the hole of the rain gauge with some pressure. A click sound can be heard.

NOTE The transmitter box contains sophisticated electronic parts, so you must treat it with care.

CABLE CONNECTIONS

It is better you connect the cables of each sensors to the transmitter box before positioning the pole.

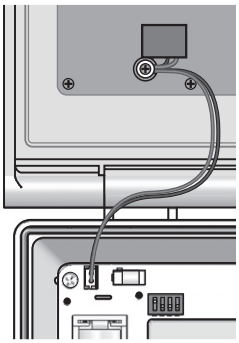


1. Unscrew to open the transmitter box.
2. Take off the rubber stopper from the cable slot.
3. Insert all the sensor cables through the cable slot.
4. Plug each sensor cable into corresponding socket that has name below the socket for recognition. A click sound can be heard.
5. Return the rubber stopper to the cable slot.

TRANSMITTER BOX-BATTERY INSTALLATION

The solar panel on transmitter box is an energy saving feature, which is an environmentally friendly way to provide power to the sensors and prolongs battery life. It can entirely provide power to the supplied rechargeable battery. Sensors can operate entirely on the rechargeable battery power. Locate the transmitter box under direct sunlight for power supplying by the solar panel.

The rechargeable battery from factory is not with full battery for long time use and it probably becomes low battery during the shipping. We recommend you to charge it for several hours by the connected solar panel.



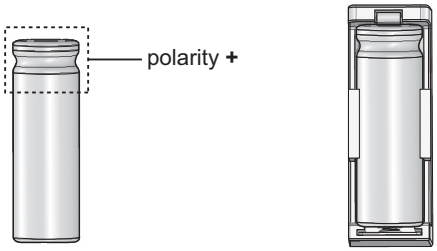
You can also purchase a power adapter separately for directly providing power to the transmitter box. The output voltage of the power adapter is 3V. Route the adapter cable through the cable slot.

Please check the solar panel connection. If it is not firmly plugged, please re-connect the solar panel:

Plug the end of color-corded connector into corresponding socket in the transmitter box as shown below and place the wires neatly inside the box.

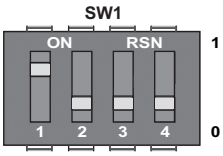
To install the rechargeable battery:

Insert the battery into the battery compartment, matching the polarity **+/-**.



CHANNEL SETTING

Your weather station system can expand with up to 8 sets of thermometer & humidity sensors, and one of each of wind and rain sensors, which share one main unit to display the weather readings. You can number each transmitter box with an independent channel ID (**1**-**8**) by sliding the switches.



Please follow the below chart to adjust the sliding switches of SW1:

NOTE The below **0** in the chart represents **off** and **1** represents **on**.

CH	PIN 2	PIN 3	PIN 4
Channel 1	0	0	0
Channel 2	0	0	1
Channel 3	0	1	0
Channel 4	0	1	1
Channel 5	1	0	0
Channel 6	1	0	1
Channel 7	1	1	0
Channel 8	1	1	1

For obviously indicate the status of your channel, you can turn on the LED light in the corresponding transmitter box by sliding the **PIN 1** switch to **1**.

Function	PIN 1
Disable LED	0
Enable LED	1

After setting, please turn off the LED light by sliding the **PIN 1** switch to **0** to save power, and then close the box by tightening the screws.

NOTE The flashing LED indicates a normal transmission (See **LED Light Indicator**).

REMOVE SETTING

For removing the previous setting from the transmitter box, you can press **RESET** and **KEY** at a time, then only release **RESET**, red light flashes 5 times. Then release **KEY**. The channel setting and calibrated wind direction are all removed from the transmitter box.

LED LIGHT INDICATOR

There are three colors of LED lights in transmitter box, green, red and blue. Different color combinations indicate different status.

Light Color	Operations
Blue->green->red	Flash once when you (Press and)release **RESET**
Red flashes every second	Flash 5 times then remove setting of all the sensors from transmitter box (See **Remove setting** section)
Red	Wind direction calibration (See **Direction Calibration**).
Blue flashes	A normal transmission (WMR300A)
Green flashes	A normal transmission (WMR300)

SENSORS INSTALLATION

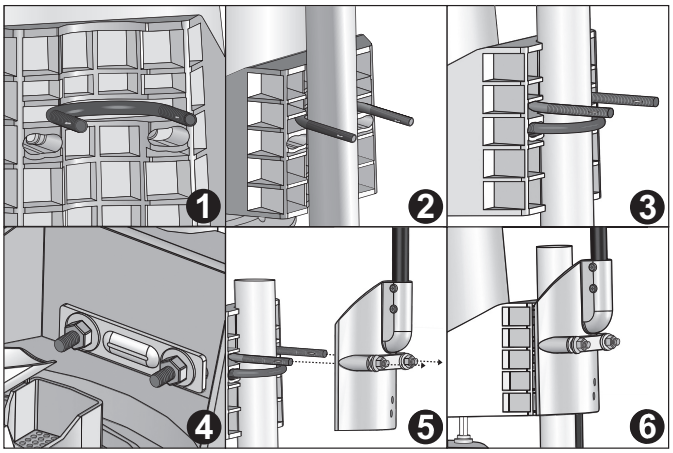
You have three options to install the sensors.

The transmitter box is capable of transmitting data wirelessly an approximate operating range of 300m (1000 feet). Ideal placements for the sensor would be in any location on the roof of a building that is in an open area away from trees or other obstructions preventing from the wind flow for an accurate reading. Additionally, locate the transmitter box at the direct sunlight for power supplying by the solar panel.

Solar panel facing:	If you reside in the:
North	Southern Hemisphere
South	Northern Hemisphere

NOTE Make sure the temperature and humidity sensor should be located at least 1.5 meters above the ground surface to avoid the ground temperature affecting accuracy of the temperature and humidity sensor.

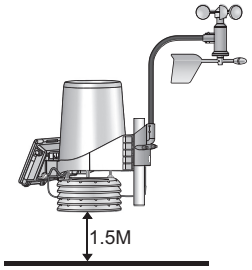
Option 1: All sensors are installed on a pole.

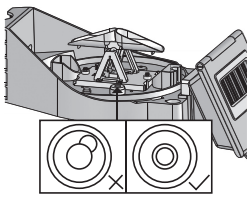


NOTE Please take off the rain collector before installation and choose a pole with the diameter that is about 32-45mm.

1. Locate one U-bolt without flat washers, lock washers and hex nuts into the gap of the rain gauge (Figure 1).
2. Let the pole fully approach to the inner of the U-bolt (Figure 2).
3. Locate the other U-bolt without flat washers, lock washers and hex nuts into the screw holes of the rain gauge (Figure 3).
4. Put the backing metal plate through the U-bolt and securely tighten two pairs of the flat washers, lock washers and hex nuts over the plate (Figure 4) by wrench.
5. Insert the two ends of the first U-bolt into the screw holes of the wind sensor (Figure 5).
6. Tighten the other two pairs of flat washers, lock washers and hex nuts on the U-bolt of the wind sensor by wrench (Figure 6).

NOTE Make sure the water bubble in the balance indicator on the rain gauge stay within the circle. Check the balance status regularly for an accurate rainfall rate reading.





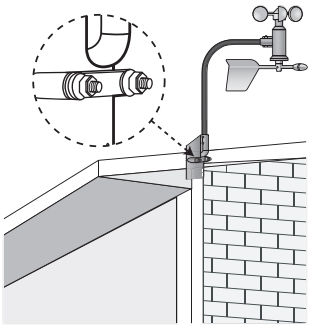
7. Follow the instructions in sections of **Cable Connections, Transmitter Box-Battery Installation and Channel Setting**.
8. Securely locate the pole in your desired outdoor area.
9. Route the excessive cables neatly by using the provided cable ties.

NOTE 6 meters wind sensor cable is provided for you to locate the wind sensor separately from the pole like in **Option 2** and **Option 3**. Route the excessive cables if necessary.

NOTE Put the plastic debris filter into the rain collector. Please check the filter regularly and ensure it is not fully covered by the leaves or other objects.

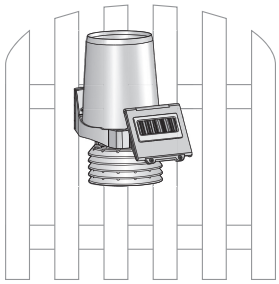
Option 2: Wind sensor is installed separately; other sensors with transmitter box are installed on a pole.

1. Follow the steps 3-4 in **Option 1** to install the temperature/hygro sensor and rain sensor on a pole.
2. Insert the Type A screws into the wind sensor. Securely screw them into your desired location using wrench.
3. Follow the steps 7-9 in **Option 1** to complete the installation.



Option 3: Excepting wind sensor is installed on a pole; other sensors with transmitter box are installed separately.

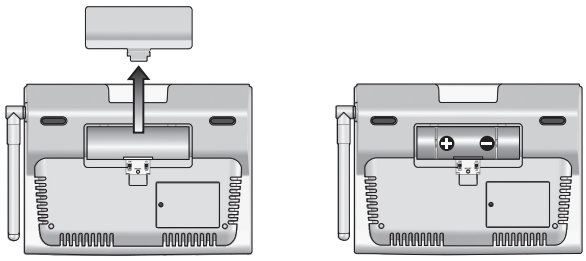
1. Follow the steps 5-6 in **Option 1** to install the wind sensor on a pole.
2. Insert the Type A screws into the rain gauge. Securely screw them into your desired location using wrench.
3. Follow the steps 7-9 in **Option 1** to complete the installation.



MAIN UNIT-BATTERIES INSTALLATION

To insert batteries:

1. Remove the battery compartment cover.
2. Insert the supplied batteries in the compartment, matching the polarities (**+** / **-**).
3. Press **RESET** in the compartment.
4. Close the battery compartment cover.



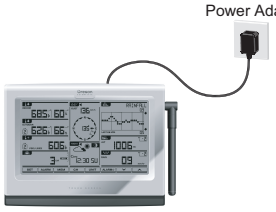
NOTE Do not use rechargeable batteries. It is recommended that you use alkaline batteries with this product for longer performance.

Low battery indicators:

Icon	Meaning
MAIN	Main unit batteries low
SENSOR	Transmitter box(es) batteries low
	Transmitter box(es) / main unit batteries low

For continuous use, install the power adapter. The batteries are for back-up use only. Plug the power adapter into an electrical outlet not controlled by a wall switch.

NOTE The power adapter is intended to be correctly oriented in a vertical or floor mount position. The prongs are not designed to hold the plug in place if it is plugged into a ceiling, under-the-table or cabinet outlet.



PAIRING SENSORS / REMOVE SENSORS

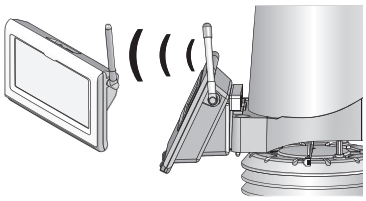
To pair a sensor:

1. The **SW4** pairing switch in transmitter box is set to **1** (**ON**).
2. Press TODAY area.
3. Press and hold SET and UNIT at a time until you enter sensor setup mode. (All sensor readings disappear on the screen, **- -** displays on the screen.)
4. Press ⌄ or ⌃ to select the channel you want to add the sensor. The channel in dash mode (SET displays) is available for pairing a sensor.
5. Press and hold SET for 2 seconds. There is a beep. Press anywhere on the panel not in TODAY area.
6. **SEARCH** indicator in TODAY area flashes to do pairing.
7. When **SEARCH** disappears and the selected channel of sensor displays the weather reading on the screen, the pairing is complete and successful.

NOTE The main unit searches the sensor for about 10 minutes. Please complete the pairing within an hour after you switch on the pairing switch in the transmitter box. Otherwise, you need to turn off the pairing switch, and then switch it on again.

NOTE Make sure you calibrate the direction of wind vane on the wind sensor after adding sensors, see **Direction Calibration** for details.

TIP The transmission range may vary depending on many factors. You may need to experiment with various locations to get the best results. Make the antenna of the transmitter box and the one on the main unit be paralleled to get a better pairing performance.



To remove a sensor:

1. Press TODAY area.
2. Press and hold SET and UNIT at a time until you enter sensor setup mode. (The weather reading disappears on the screen, **- -** displays on the screen).
3. Press ⌄ or ⌃ to select the channel of the sensor you want to remove. You can only remove the sensor that the reading is not in dash mode (MEM displays).
4. Press and hold MEM for at least 2 seconds. There is a beep and then the screen shows **- -**, the sensor is successfully removed from the main unit.

CLOCK

MANUALLY SET CLOCK

NOTE To set the clock/calendar manually, disable the clock signal reception first (see **To Enable / Disable signal reception**).

To manually set the clock / calendar:

1. Press TODAY area to activate. ◀ displays next to the area and the tool bar displays at the below of the screen.
2. Press and hold SET on the tool bar, then toggle SET between time zone offset, day time saving options, 12/24 hr format, hour, minute, year, day/month format, month, day, weekday, language, latitude and longitude .
3. Once in desired setting, press ⌄ or ⌃ to change the settings.
4. Press:
   - SET to confirm and continue to next setting

   OR
   - Touch panel area (except tool bar) to confirm and exit.

NOTE For WMR 300, the range of time zone offset is between -12 and +12. You should manually input the time zone of your location, please check your local weather observatory for detail. For example, Hong Kong should be set to +8.

NOTE The language options are English (**E**), Russian (**R**), Spanish (**S**), Italian (**I**), German (**D**) and French (**F**).

NOTE You need to input latitude and longitude of your location. Please refer to your local weather observatory website. The latitude and longitude input affects the sunrise/sunset time.

NOTE Excepting the latitude and longitude, **AUTO**/**DST** (Daylight saving time)/**ST** (Standard time) settings also affect the sunrise/sunset time. If **AUTO** is set, the sunrise/sunset time follows the **DST**/**ST** setting of the RF clock data. If **ST** is set, the sunrise/sunset time assumes standard time. If **DST** is set, the sunrise/sunset time assumes daylight saving time.

To select clock display mode:

Press TODAY area repeatedly to toggle among:

- Clock with seconds
- Clock with weekday
- Date with year

CLOCK RECEPTION

This product is designed to synchronize its clock automatically with a clock signal.

WMR300:

Slide switch to **EU** / **UK** to select the desired signal and manually set clock by selecting time zone between -12 and +12.

- EU: DCF-77 signal: within 1500km (932 miles) of Frankfurt, Germany.
- UK: MSF-60 signal: within 1500km (932 miles) of Anthorn, England.

NOTE Press **RESET** whenever you change **EU** / **UK** setting.

WMR300A:

- WWVB-60 signal: within 3200km (2000 miles) of Fort Collins Colorado. Manually set clock to select time zone **Pacific** (**P**) / **Mountain** (**M**) / **Central** (**C**) / **Eastern** (**E**).

The icons below indicate the status of the clock reception signal.

Icon	Meaning
	Time is synchronized, but not updated once during the last 48 hours.
Flashing	Receiving signal is weak.
	Time is synchronized and updated at least once during the last 48 hours.
Flashing	Receiving signal is strong

NOTE Reception takes 4-10 minutes for synchronizing.

To enable / disable signal reception:

Press and hold a place within TODAY area to enable / disable signal reception. A beep will sound to confirm action.

ALARM CLOCK

To set the daily alarm:

1. Press TODAY area to activate. ◀ displays next to the area and the tool bar displays at the below of the screen.
2. Press ALARM.
   - Press ALARM to turn on the daily alarm. ((•)) and displays.
   - Press ALARM to turn off the daily alarm. disappears.
3. Press UNIT to change the time display between 12hr/24hr format.
4. Press and hold ALARM to enter editing mode.
5. Press ∨ or ∧ to edit and press ALARM to confirm editing.
6. Press anywhere not in TODAY area to exit.

MOON PHASE

In the Northern hemisphere, the moon waxes (amount of moon we see that grows after the New moon) from the right. So, the sunlit part of the moon moves from right to left in the Northern hemisphere while in the Southern hemisphere, it moves from left to right. The direction depends on the latitude of the person observing it.

Below are two tables which diagrammatically illustrate how the moon will appear on the main unit .

Northern hemisphere

	New Moon		Full Moon
	Waxing Crescent		Waning Gibbous
	First quarter		Third quarter
	Waxing Gibbous		Waning Crescent

Southern hemisphere

	New Moon		Full Moon
	Waxing Crescent		Waning Gibbous
	First quarter		Third quarter
	Waxing Gibbous		Waning Crescent

To view moon phase:

1. Press TODAY clock area to activate.
2. Press ∨ or ∧ to view moon phase for specific dates.

WEATHER FORECAST

This product forecasts the next 12 to 24 hours of weather within a 30-50 km (19-31 mile) radius (US – with a 75% accuracy).

Icon	Meaning
	Sunny
	Partly cloudy
	Cloudy
	Rainy
	Snowy

TEMPERATURE AND HUMIDITY

To view temperature area:

- Press **INDOOR** / **OUTDOOR** temperature area. ◀ displays on top of the temperature reading.

To change channel (outdoor temperature only):

- Press CH to change channel.

To select the temperature measurement unit:

- Press UNIT to select **°C** / **°F**.

NOTE The unit of all temperature related displays will be changed simultaneously.

To view humidity readings:

- Press **INDOOR** / **OUTDOOR** humidity area. ◀ displays on top of the humidity reading.

To view temperature and humidity trend:

The temperature and humidity trend icons are based on recent sensor readings.

The trend lines are shown next to the temperature and humidity readings. The trend is shown as follows:

Rising	Steady	Falling
↗	→	↘

DEWPOINT / HEAT INDEX / WIND CHILL

To view dew point:

- Press + area repeatedly until **DEWPOINT** displays.

To view heat index:

- Press + area repeatedly until **HEAT INDEX** displays.

Temperature Range	Warning	Meaning
27°C to 32°C (80°F to 89°F)	Caution	Possibility of heat exhaustion
32°C to 40°C (90°F to 104°F)	Extreme Caution	Possibility of heat dehydration
41°C to 54°C (105°F to 129°F)	Danger	Heat exhaustion likely
54°C to 92°C (130°F to 151°F)	Extreme danger	Strong risk of dehydration / sun stroke

NOTE Heat index is only calculated when temperature is 80° F / 27°C or above.

To view wind chill:

- Press [+] area repeatedly until **WIND CHILL** displays.

SUNRISE / SUNSET

NOTE Make sure you input latitude and longitude of your location in TODAY area, which affects the sunrise/sunset time.

NOTE Excepting the latitude and longitude, daylight saving time setting also affects sunrise and sunset (See **Manually Set Clock**).

You can view the sunrise or sunset time in area.

- Press **SUNRISE/SUNSET** area. ◀ displays on the top of the time display.
- Press UNIT to change the time display between 12hr/24hr format.

WIND

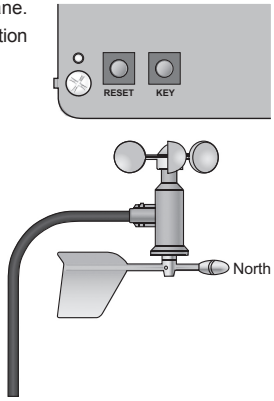
DIRECTION CALIBRATION

Before pairing a wind sensor, make sure the head of the wind vane of that sensor point to the north while pressing **KEY** for 2 seconds in the transmitter box to calibrate the direction. If the calibration is successful, red light flashes once. You can use a compass to look for an accurate direction of north if necessary.

However, if you are the user in North America, there are already 15°(degree) variations existing between the true north and a compass reading of north. You can consult your local observatory about this issue.

If it is difficult to control the wind vane after installation, you can calibrate through setting on main unit.

1. Make a compass approach to the wind vane.
2. Calculate the angle between the current direction and the north direction.
3. Press wind area to activate.
4. Press and hold SET, and then press ∨ or ∧ to calibrate the angle value.
5. Press SET again to confirm setting.



For example, inputting the angle value that you want to set as north. If current direction is 25 degree and you want to set it as north, then you input 25 degree in the calibration mode. Once you return to the idol mode, the direction reading displays 0 degree, which is the north.

NOTE You need to calibrate the wind sensor again if you want to relocate the sensor.

WIND SPEED / DIRECTION

To select wind display mode:

Press wind area to toggle between:

- **GUST** (Gust)
- **AVG** (Average)

To select wind speed unit:

Press UNIT to switch among:

- Knots (**knots**)
- Kilometres per hour (**km/h**)
- Miles per hour (**mph**)
- Metres per seconds (**m/s**)

The wind level is shown by a series of text icons:

LIGHT	MODERATE	STRONG	STORM
2-8 mph (3-13 km/h)	9-25 mph (14-41 km/h)	26-54 mph (42-87 km/h)	>55 mph (>88 km/h)

To read the wind direction:

Status	Wind Direction Indicator	Meaning
GUST	➤	Real-time wind direction
AVG	➤	Real-time average wind direction
AVG	≻ (Max 6 sets)	Wind direction of last 1 hour

NOTE The wind chill factor is based on the combined effects of temperature and wind speed. Displayed wind chill is calculated solely from channel 1 thermometer and humidity sensor.

BAROMETRIC PRESSURE

The altitude reflects distance from sea level at your position.

To set the altitude level compensation for the barometric readings:

1. Press area to activate. ◀ displays next to the area and the tool bar displays at the below of the screen.
2. Press the area until **ALT** displays on the screen. You are in altitude mode.
3. Press and hold SET on the tool bar.
4. Press ∨ or ∧ to edit. You can press UNIT to change the altitude unit between **M** (Meter) and **FEET** (Feet) while editing.
5. Press SET to confirm or touch panel area (except tool bar/barometer area) to confirm.
6. After setting altitude, the new altitude setting will not be effective immediately. The **ALT** icon flashes and stops flashing until the next pressure sampling. The new altitude setting takes effect on the new pressure sampling.

NOTE When altitude is set to 0 meter, the pressure reading is the local pressure. If the altitude is set to the current location, the new pressure reading is an offset pressure to the sea level.

To select the measurement unit for the barometer:

1. Press barometer area to toggle between altitude and current barometer.
2. Press UNIT to select **inHg** (inches of mercury) / **mmHg** (millimetres of mercury) / **mb** (millibars per hectopascal) / **hPa**.

To view pressure trend:

The barometric pressure trend icons are based on recent sensor readings.

The trend lines are shown next to the pressure readings. The trend is shown as follows:

Rising	Steady	Falling
↗	→	↘

RAINFALL

To select rainfall display mode:

Press rain area to toggle between:

- **THIS HOUR** (Hourly rainfall)
- **RATE** (Rain rate)
- **ACCUM** (Accumulated rainfall)
- **PAST 24 hrs** (Rainfall recorded in the past 24 hours)

To select the measurement unit for the rainfall:

Press UNIT to select between **mm** (millimeter) and **in** (inch).

To select the measurement unit for the rainfall rate:

Press UNIT to select between **in/hr** (inch per hour) and **mm/hr** (millimeter per hour).

ACCUMULATED RAINFALL

To display accumulated rainfall:

Press rain area repeatedly until **ACCUM** display. (**SINCE** displays in the TODAY clock area that displays the start date / time of rainfall recording simultaneously).

To reset SINCE time:

Press and hold **MEM** to set current time as start of accumulated rainfall records. The rainfall record is cleared and reset to 0.

BAR CHART

The bar chart simultaneously displays the data while you press on the corresponding area.

To select chart display mode:

Press on the below areas to toggle among these chart displays.

- **IN TEMP** (Indoor temperature)
- **IN HUM** (Indoor humidity)
- **OUT TEMP** (Outdoor temperature)
- **OUT HUM** (Outdoor humidity)
- **DEWPOINT** (Dew point)
- **HEAT INDEX** (Heat index)

- **WIND CHILL** (Wind chill)
- **WIND** (Wind speed)
- **BARO** (Barometer)
- **RAINFALL** (Rain)

To select time range display mode:

Press bar chart area to toggle the chart records between the following time ranges.

- **LAST 24 HRS** (Past 24 hours)
- **LAST 24 DAYS** (Past 24 days)
- **LAST 24 MTHS** (Past 24 months)

To select record range display mode:

Press bar chart area, and then press MEM to toggle the chart records between the following ranges.

- **MAX** (Maximum record)
- **MIN** (Minimum record)

NOTE The purpose of the bar chart is to provide a quick comparison between the records. Changing the measurement unit will have corresponding effect on the bar chart display.

MEMORY

MAX / MIN OF TODAY / MONTHLY RECORDS

Area	Type of Memory	Indicators	
Temperature	Current indoor / outdoor temperature	MONTHLY	MAX
			MIN
		TODAY	MAX
			MIN
	Heat index	MONTHLY	MAX
		TODAY	
	Wind chill	MONTHLY	MIN
		TODAY	
	Dewpoint	MONTHLY	MAX
		TODAY	MIN
Humidity	Current indoor / outdoor humidity	MONTHLY	MAX
			MIN
		TODAY	MAX
			MIN
Wind	Gust wind speed	MONTHLY	MAX
		TODAY	
Barometer	Barometer	MONTHLY	MAX
			MIN
		TODAY	MAX
			MIN
Rain	Rain rate	MONTHLY	MAX
		TODAY	
	Rainfall	MONTHLY	MAX
		TODAY	

To view memory records:

1. Press desired area to activate.
2. Press MEM to toggle between **MIN**/**MAX** of **TODAY**/**MONTHLY** recorded readings.

To clear individual area records:

1. Select a record in memory.
2. Press and hold MEM for 2 seconds.
3. Delete process is complete when display changes to current reading.

NOTE When **MAX**/**MIN** reading displays, the corresponding timestamp will be displayed in the TODAY area

HOURLY RECORDS

Display	Hourly readings of up to
Barometer	24 hours back
Hourly Rainfall	24 hours back

To view hourly records:

1. Press desired area to activate until the hour frame displays.
2. Press ∨ or ∧ to view current (**0 hr**) / hourly reading (from -**1hr** to -**24hr**).

DATA LOG

The weather data can be automatically saved by setting data logger, and then you can view the data through a PC program by uploading to the PC.

To set data log:

1. Press TODAY area, then press MEM to activate **DATA LOG** mode.
2. Press and hold SET .
3. Press ∨ or ∧ to select frequency of data recording (**1** / **5** / **15** / **60** minutes).
4. Press SET .
5. Number of days memory will allow for records will be displayed.

Frequency In Minutes	No. of Days Available for Data Logging with Memory Available
1	22D (3 weeks)
5	113D (3.5 months)
15	341D (10.5 months)
60	1364D (3.5 years)

To view remaining days for records:

Press MEM area.

NOTE When **DATA LOG** is almost full, **DATA LOG** flashes to remind you to transfer the data to PC for storage. Otherwise, data logger cannot log any more data when it is full.

To upload records to PC:

Plug the small end of the USB cable to USB port on the main unit and the big end of the cable into the USB port of the PC. The records will be uploaded onto the software run by the PC via the USB cable.

displays in TODAY area on main unit.

NOTE PC program provided must be installed before uploading of records from main unit.

To clear records:

1. Press TODAY area, then press MEM , **DATA LOG** displays.
2. Press and hold MEM .
3. After all the data cleared, the display shows the new time remaining. Delete process is complete and successful.

ALARM

Weather alarms are used to alert you of certain weather conditions. Once activated, the alarm will turn on and start flashing when a certain criterion is met. The alarm does not flash and goes back to normal until the reading is not beyond the alarm setting anymore.

Area	Type of Alarm	
Clock	Daily alarm	
Temperature	Current indoor / outdoor temperature	HI
		LO
	Heat index	HI
	Dew point	HI
		LO
	Wind chill	LO
Humidity	Current indoor / outdoor humidity	HI
		LO
Wind	Gust wind speed	HI
Barometer	Barometric pressure	*
Rain	Rain rate	HI
	Past 24-hour rainfall	HI

**Barometric pressure alarm is a pressure drop alarm*

To set the alarm:

1. Press desired area to activate.
2. Toggle ALARM to display current reading and **HI** / **LO** alarm.
3. Press and hold ALARM .
4. Press ∨ or ∧ to set the desired values.
5. Press
   - ALARM to confirm and continue to next setting

OR

- Touch anywhere on the screen (except tool bar / TODAY area) to confirm and exit.

To enable / disable alarms:

1. Press desired area to activate.
2. Press ALARM to display set **HI** / **LO** alarm.
3. Press ALARM to turn alarm on or off.

NOTE **- -** indicates alarm is not set / disabled.

NOTE Clock alarm sound is different from weather alarms to allow for easy differentiation by user.

To silence any alarm:

- Press anywhere on the touch panel.

OR

- The alarm automatically turns off after 2 minutes.

NOTE When alarm is on, the channel of triggered alarm will be flashed and alarm sound lasts for 2 minutes.

BACKLIGHT

Press anywhere on the touch panel to activate the backlight for 8 seconds.

OR

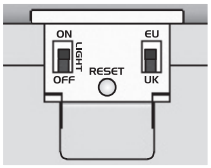
If the main unit is powered by power adapter, switch the **LIGHT** to **ON** in the main unit compartment. The light will be on until you switch it **OFF**.

NOTE You need to take off the battery compartment cover to do switching.

RESET

Main unit:

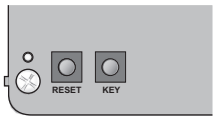
Press **RESET** to return to the default settings.



NOTE You need to take off the battery compartment cover to do switching.

Transmitter box:

Press **RESET** to remove the record of the calibrated wind direction.



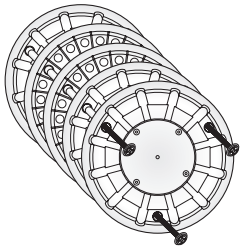
MAINTAINANCE

Each sensor of this kit has a durable plastic casing that should retain its luster for many years. It is better to do regular maintenance to keep the sensors with high accuracy every half year. Do cleaning the casing only with a soft cloth slightly dampened with water or a mild soap. Please use screw drivers or wrench to take some parts off if necessary.

Electrical storms can sometimes cause power surges harmful to electronic equipment. For your own safety, take caution when using the main unit or doing maintenance during storms.

TO MAINTAIN THE THERMO/HYGRO SENSOR

1. Remove the rain collector from the rain gauge.
2. Unscrew the three type B screws from the rain gauge.
3. Unscrew the three screws from the bottom of the thermo/hygro sensor casing.
4. Clean the casing excluding the one with sensor by water, and then remove the dust around the sensor carefully.
5. Install all the parts until they are entirely dried.



NOTE If the temperature and humidity readings are still strange and inaccurate, you need to consider replacing this sensor, please contacting our customer service for the details.

TROUBLE SHOOTING

Problem	Symptom	Remedy
Barometer	Strange readings	Check altitude setting on the main unit.
Wind sensor	No updates of the wind direction	Check the wind vane.
	Display dashes on main unit	1. Check the connections. 2. Check the channel setting. 3. Check the pairing successful or not.
Rain sensor	No readings	1. Check the cable tie on the tipping bucket to be cut away or not. 2. Check the balance indicator. 3. Check the plastic filter in rain collector. 4. Check the connections.
	Strange readings	1. Check the plastic filter in the rain collector. 2. Check the balance indicator.
Temp/hygro sensor	Display dashes	1. Check the connections. 2. Check the pairing. 3. Check the channel setting.
	No outdoor temp/ hygro readings	1. Check the rechargeable battery in transmitter box. 2. Check the power adapter connection and main unit batteries status. 3. Do maintenance for the sensor.
Calendar	Strange date / month	1. Change language. 2. Check the calendar setting.
Clock	Cannot adjust clock	Disable radio-controlled clock.
	Cannot auto-synchronize	1. Check batteries status. 2. Reset the main unit. 3. Manually activate radio controlled clock.
Sunrise/ Sunset	Strange readings	1. Set longitude/latitude. 2. Check the daylight saving time setting.
Transmitter box	LED light(s) do not flash	1. Check the switch. 2. Check the polarity of the rechargeable battery. 3. Check the connection of the solar panel.
Sensors pairing	Time is too long	1. Adjust the antennas to be parallel. 2. Reset the pairing switch (switch off then on again).

PRECAUTIONS

- Do not subject the unit to excessive force, shock, dust, temperature or humidity.
- Do not cover the ventilation holes with any items such as newspapers, curtains etc.
- Do not immerse the unit in water. If you spill liquid over it, dry it immediately with a soft, lint-free cloth.
- Do not clean the unit with abrasive or corrosive materials.
- Do not tamper with the unit's internal components. This invalidates the warranty.
- Only use fresh batteries. Do not mix new and old batteries.
- Images shown in this manual may differ from the actual display.
- When disposing of this product, ensure it is collected separately for special treatment.
- Placement of this product on certain types of wood may result in damage to its finish for which Oregon Scientific will not be responsible. Consult the furniture manufacturer's care instructions for information.
- The contents of this manual may not be reproduced without the permission of the manufacturer.
- Do not dispose old batteries as unsorted municipal waste. Collection of such waste separately for special treatment is necessary.
- Please note that some units are equipped with a battery safety strip. Remove the strip from the battery compartment before first use.

NOTE The technical specifications for this product and the contents of the user manual are subject to change without notice.

SPECIFICATIONS

MAIN UNIT

Dimensions (L x W x H)	205 x 146 x 52.5 mm (8.07 x 5.75 x 2.07 inches)
Weight	740g (1.63lbs) with batteries; 540 g (1.2lbs) without battery
Battery	3 x C size 1.5V batteries
Adaptor	DC 6V 100mA adapter
Support channels	1wind, 1rain, 1UV, 1solar and 1~8 thermo/hygro

INDOOR BAROMETER

Barometer unit	Mb,hPa, inHg and mmHg
Measuring range	540 to 1,100mb/hPa
Accuracy	+/- 1mb/hPa between 677 & 1,016hPa
Resolution	0.1mb/hPa ,0.01inHg, 0.1mmHg (remark: inHg and mmHg converted from the pressure of 0.1mb resolution)
Altitude setting	-600m ~ 4570m (-999feet ~ 14993 feet) User setting for offset local pressure to sea level pressure
Weather forecast	Sunny, Snowy, Partly Cloudy, Cloudy and Rainy
Display modes	Current, Max, Min, Historical data for last 24hrs
Memory modes	Today Max & Min, Monthly Max & Min (with time stamp)
Alarm	Pressure change alarm

INDOOR TEMPERATURE

Temp. unit	˚C or ˚F
Displayed range	0˚C to 60˚C
Operating range	0˚C to 60˚C
Accuracy	+/- 0.5˚C or 1˚F typical at room temperature
Resolution	0.1˚C or 0.1˚F (remark: ˚F convert from 0.1˚C display)
Display modes	Current, Min and Max
Memory modes	Today Max & Min, Monthly Max & Min (with time stamp)
Alarm	Hi / Lo

INDOOR RELATIVE HUMIDITY

Displayed range	0% to 99%RH
Operating range	0% to 99%RH
Resolution	1%
Accuracy	+/-3% (Typical) @ 25˚C
Display modes	Current, Min and Max
Memory modes	Today Max & Min, Monthly Max & Min (with time stamp)
Alarm	Hi / Lo

RADIO-CONTROLLED / ATOMIC CLOCK

Synchronization	Auto or disabled
Clock display	HH:MM:SS / HH:MM Weekday
Hour format	12hr AM/PM or 24hr
Calendar	DD/MM/YR or MM/DD/YR
Weekday in 6 languages	EN, FR, DE, IT, ES, RU

OUTDOOR TEMPERATURE / HUMIDITY UNIT RELATIVE TEMPERATURE

Dimensions (Ø x H)	Ø190 x 126 mm (Ø7.48 x 4.96 inches)
Weight	580g(1.28lbs)
Temp. unit	˚C or ˚F
Displayed range	-40˚C to 65˚C
Operating range	-40˚C to 65˚C
storage temperature	-45˚C to 70˚C
Resolution	0.1˚C
Accuracy	+/- 0.5 ˚C
Memory modes	Today Max & Min, Monthly Max & Min (with time stamp) Dew point temp. Max and Min Wind chill temp. Min Heat index temp. Max
Alarm	Hi / Lo for current temp and dew point Hi for heat index Lo for wind chill

RELATIVE HUMIDITY

Displayed range	0% to 99%RH
Operating range	0% to 99%RH
Resolution	1%
Accuracy	3%
Display modes	Current, Min and Max
Memory modes	Today Max & Min, Monthly Max & Min (with time stamp)
Alarm	Hi / Lo

SOLAR RF TRANSMITTER BOX

Dimensions (L x W x H)	178 x 154 x 91.7mm (7 x 6.06 x 3.61 inches)
Weight	530 g (1.2 lbs)
Battery	1.2 V recharged battery
RF frequency	915Mhz (US) / 868Mhz (EU, UK)
Range	300 meters (1000 feet), line of sight no obstructions
Transmission intervals	Wind: 2.5~3 sec TH: 10~12 sec Rain: 20~24 sec
Channel	1wind, 1rain, 1UV, 1solar and 1thermo/hygro

RAIN GAUGE

Dimensions (L x W x H)	287.5 x 226 x 279 mm (11.32 x 8.90 x 10 inches)
Weight	1213g (2.674lbs)
Operating temperature	-40 ~ +65˚C
Storage temperature	-45 ~ + 70˚C
Unit for rainfall	mm and in
Unit for rain rate	mm/hr and in/hr
Range for rainfall	0~199.99inches
Range for rain rate	0~1016mm/hr (0~393.6 inches)
Resolution	0.01inches (0.254mm) typical
Accuracy for rainfall	+/- 4%
Accuracy for rain rate	±5% 0~ 127mm/Hr (0~5 in/hr)
Memory modes	Acc rainfall for last memory reset Max rain rate
Display modes	Rain rate, Rainfall (Past 24hrs/Hourly/Accumulated)
Alarm	Hi for rain rate & past 24 hr

WIND SENSOR UNIT

Dimensions (L x W x H)	516 x 345.5 x 135 mm (20.31 x 13.60 x 5.32 inches)
Weight	520g (1.15lbs)
Operating temperature	-40 ~ +65˚C
Storage temperature	-45 ~ + 70˚C
Wind speed unit	m/s, km/h, mph, knots
Wind speed range	0~80m/s
Wind speed resolution	0.1mph or 0.1knot or 0.1m/s
Speed accuracy	+/- 0.9m/s (under 18m/s) +/- 5% (above 18m/s)
Direction resolution	1º
Direction resolution	3º
Memory modes	Today/Monthly Max gust speed with direction (with time stamp)
Display modes	Gust/average wind speed & direction
Alarm	Hi for Gust speed

ABOUT OREGON SCIENTIFIC

Visit our website (www.oregonscientific.com) to learn more about Oregon Scientific products.

For any enquiry, please contact our Customer Services at info@oregonscientific.com.

EU-DECLARATION OF CONFORMITY

Hereby, Oregon Scientific, declares that this Ultra-precision Professional Weather System (model: WMR300 / WMR300A) is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC. A copy of the signed and dated Declaration of Conformity is available on request via our Oregon Scientific Customer Service.

COUNTRIES RTTE APPROVED COMPLIED
All EU countries, Switzerland CH
and Norway N

FCC STATEMENT

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

WARNING Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio / TV technician for help.

DECLARATION OF CONFORMITY

The following information is not to be used as contact for support or sales. Please call our customer service number (listed on our website at www.oregonscientific.com), or on the warranty card for this product for all inquiries instead.

We

Name:	Oregon Scientific, Inc.
Address:	19861 SW 95th Ave.Tualatin, Oregon 97062 USA
Telephone No.:	1-800-853-8883

declare that the product

Product No.:	WMR300/WMR300A
Product Name:	Ultra-precision Professional Weather System
Manufacturer:	IDT Technology Limited
Address:	Block C, 9/F, Kaiser Estate, Phase 1, 41 Man Yue St., Hung Hom, Kowloon, Hong Kong

is in conformity with Part 15 of the FCC Rules. Operation is subject to the following two conditions: 1) This device may not cause harmful interference. 2) This device must accept any interference received, including interference that may cause undesired operation.

Oregon SCIENTIFIC

Ultra-precision Professional Weather System
Model: WMR300 / WMR300A
USER MANUAL

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